APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,991	08/20/2001	Angshuman Saha	6950-60280 (008856-0001)	7706

47372 7590 05/11/2005	EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-67* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Figure 1 should be designated by a legend such as --Prior Art-- because only that which is

old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR

1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted

by the examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-2, 5, 9, 10-11, 15-18, 21, 25-26, 30-33, 36, 40-42, 46-49, 52, 56-57, 61-62, 65-

67 are rejected under 35 U.S.C. 102(e) as being anticipated by Azizoglu et al. US 6,430,201.

    Regarding claims 1, 65-67, the claimed apparatus for transmitting a sub-rate data stream

over a communication network that uses a selected network protocol, wherein the sub-rate data

stream has an associated sub-rate protocol is disclosed by multiple Gigabit Ethernet and Fiber

Channel signals are multiplexed and transported on WDM communications link using SONET

signaling with a transmitter decoding the 8b/10b encoded GbE/FC signals to reduce their

signaling rates to no greater than the payload data rate of an OC-48 signal used on link. See

column 2, lines 66-67, column 3, lines 1-14, column 6, lines 19-24. The claimed rate adapter

coupled to receive the sub-rate data stream and operable to adapt a rate characteristic associated

with sub-rate protocol to a rate characteristic associated with selected network protocol to

generate a rate-adapted data stream from sub-rate data stream is disclosed by codec (Figure 2,

elements 22-1, 22-2) which receives 10-bit parallel streams from serializer (elements 20-1,20-2)

and decodes them by removing the run-length code overhead from each stream and outputs 8-bit

parallel streams at a bit rate of 1Gb/s, the aggregate rate at the output of both codecs is 2.25 Gb/s.

The claimed payload and network framer coupled to receive the rate-adapted data stream and

operable to frame the rate-adapted stream into a payload for transmission over the

communication network using selected network protocol is disclosed by multiplexing and

framing logic which multiplexes streams together using asynchronous statistical multiplexing

technique and maps the multiplexed signals into synchronous frames in the OC-48 signal. See

column 4, lines 12-67, column 5, lines 1-42.

Regarding claim 2, the claimed de-serializer having logic to receive a serial version of

sub-rate data stream and form sub-rate data stream is disclosed by input streams (GbE or FC) are

converted into 10-bit parallel streams by serializer/deserializer (elements 20-1, 20-2). See

column 4, lines 38-42.

Regarding claim 5, the claimed FIFO memory to provide storage for sub-rate data stream

is disclosed by FIFO buffers which store 8b/10b data bytes from codecs. See column 4, lines 63-

67, column 5, lines 1-4.

Regarding claim 9, the claimed network framer is disclosed by SONET framer (Figure 2, element 26, Figure 3, element 36).

Regarding claims 10, 15-16, the claimed apparatus comprising payload de-framer coupled to receive a payload transmitted over network using selected network protocol and to de-frame payload into rate-adapted data stream that is representative of sub-rate data stream and claimed rate adapter to receive rate-adapted stream and operable to adapt a rate characteristic associated with selected network protocol to a rate characteristic associated with sub-rate protocol to generate the sub-rate data stream is disclosed by on receive side (Figure 4) a SONET framer (Figure 4, element 36) removes SONET overhead and de-interleaver separates packets belonging to different streams using address byte in packet headers and codecs re-insert run-length code. See column 6, lines 4-18.

Regarding claim 11, the claimed serializer is disclosed by serializer/deserializer (Figure 4, elements 20-1,20-2).

Regarding claims 17-18, 25-26, 30-31, the claimed system comprising transmit rate adapter and payload framer located at a source network element is disclosed by transmitter with codecs (Figure 3, elements 22-1-22-4) and decodes 10-bit parallel streams from serializer (elements 20-1,20-2) by removing the run-length code overhead from each stream and outputs 8-bit parallel streams at a bit rate of 1Gb/s, the aggregate rate at the output of both codecs is 2.25 Gb/s and SONET framer (element 36). The claimed payload de-framer and receive rate adapter at destination network element is disclosed by receive side (Figure 4) a SONET framer (Figure 4, element 36) removes SONET overhead from streams from deserializer (elements 20-1,20-2) and

de-interleaver separates packets belonging to different streams using address byte in packet headers and codecs re-insert run-length code. See column 6, lines 4-18.

Regarding claim 21, the claimed FIFO memory to provide storage for sub-rate data stream is disclosed by FIFO buffers which store 8b/10b data bytes from codecs. See column 4, lines 63-67, column 5, lines 1-4.

Regarding claims 32, 40, the claimed method for transmitting sub-rate data stream comprising steps of adapting a rate characteristic associated with sub-rate protocol to a rate characteristic associated with selected network protocol to generate a rate-adapted data stream from sub-rate data stream is disclosed by codec (Figure 2, elements 22-1, 22-2) which receives 10-bit parallel streams from serializer (elements 20-1,20-2) and decodes them by removing the run-length code overhead from each stream and outputs 8-bit parallel streams at a bit rate of 1Gb/s, the aggregate rate at the output of both codecs is 2.25 Gb/s. The claimed framing the rate adapted stream into payload for transmission is disclosed by multiplexing and framing logic which multiplexes streams together using asynchronous statistical multiplexing technique and maps the multiplexed signals into synchronous frames in the OC-48 signal. See column 4, lines 12-67, column 5, lines 1-42.

Regarding claim 33, the claimed de-serializing a serial version of sub-rate data stream and form sub-rate data stream is disclosed by input streams (GbE or FC) are converted into 10-bit parallel streams by serializer/deserializer (elements 20-1, 20-2). See column 4, lines 38-42.

Regarding claim 36, the claimed FIFO memory to provide storage for sub-rate data stream is disclosed by FIFO buffers which store 8b/10b data bytes from codecs. See column 4, lines 63-67, column 5, lines 1-4.

Regarding claims 41, 46-47, the claimed method for receiving a sub-rate stream

comprising de-framing payload into rate-adapted data stream that is representative of sub-rate

data stream and adapting a rate characteristic associated with selected network protocol to a rate

characteristic associated with sub-rate protocol to generate the sub-rate data stream is disclosed

by on receive side (Figure 4) a SONET framer (Figure 4, element 36) removes SONET overhead

and de-interleaver separates packets belonging to different streams using address byte in packet

headers and codecs re-insert run-length code. See column 6, lines 4-18.

Regarding claim 42, the claimed serializing is disclosed by serializer/deserializer (Figure

4, elements 20-1,20-2).

Regarding claim 48, 56, 61-62, the claimed method for transporting sub-rate data stream

comprising steps of adapting a rate characteristic associated with sub-rate protocol to a rate

characteristic associated with selected network protocol to generate a rate-adapted data stream

from sub-rate data stream is disclosed by codec (Figure 2, elements 22-1, 22-2) which receives

10-bit parallel streams from serializer (elements 20-1,20-2) and decodes them by removing the

run-length code overhead from each stream and outputs 8-bit parallel streams at a bit rate of

1Gb/s, the aggregate rate at the output of both codecs is 2.25 Gb/s. The claimed framing the rate

adapted stream into payload for transmission is disclosed by multiplexing and framing logic

which multiplexes streams together using asynchronous statistical multiplexing technique and

maps the multiplexed signals into synchronous frames in the OC-48 signal. See column 4, lines

12-67, column 5, lines 1-42.

The claimed de-framing payload into rate-adapted data stream that is representative of

sub-rate data stream and adapting a rate characteristic associated with selected network protocol

to a rate characteristic associated with sub-rate protocol to generate the sub-rate data stream is

disclosed by on receive side (Figure 4) a SONET framer (Figure 4, element 36) removes SONET

overhead and de-interleaver separates packets belonging to different streams using address byte

in packet headers and codecs re-insert run-length code. See column 6, lines 4-18.

Regarding claim 49, the claimed de-serializing a serial version of sub-rate data stream

and form sub-rate data stream is disclosed by input streams (GbE or FC) are converted into 10-

bit parallel streams by serializer/deserializer (elements 20-1, 20-2). See column 4, lines 38-42.

Regarding claim 52, the claimed FIFO memory to provide storage for sub-rate data

stream is disclosed by FIFO buffers which store 8b/10b data bytes from codecs. See column 4,

lines 63-67, column 5, lines 1-4.

Regarding claim 57, the claimed serializing is disclosed by serializer/deserializer (Figure

4, elements 20-1,20-2).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.   Claims 3, 14, 19, 29, 34, 45, 50, 60 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Azizoglu et al in view of Michel et al. US 6765933.

        Regarding claims 3, 14, 19, 29, 34, 45, 50, 60, Azizoglu et al. discloses

serializer/deserializer and step of serializing/deserializing sub-rate data stream. Azizoglu et al.

fails to disclose serializer/deserializer including clock recovery circuit that recovers a sub-rate

clock associated with sub-rate data stream. Michel et al. discloses SMART chip as an

SDH/SONET framer technology for cell streams including clock recovery, clock synthesis

functions and serializer/deserializer functions. See column 3, lines 41-51. At the time the

invention was made it would have been obvious to modify Azizoglu et al. with combined clock

recovery and serializer/deserializer functions of Michel et al. One of ordinary skill in the art

would have been motivated to do this for re-timing capability on the receive side. See column

14-51.

6.   Claims 4, 12, 20, 27, 35, 43, 51,58 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Azizoglu et al.

        Azizoglu et al. discloses converting GbE inputs into 10-bit parallel streams by a

serializer/deserializer and the 10 bit streams decoded by codecs to produce an 8 bit parallel

stream where a ninth bit is added for exchanging control information. See column 4, lines 38-55.

Azizoglu et al. does not disclose de-serializer including compression logic operable to compress

ten-bit wide data to form output streams nine-bit wide as disclosed on page 15 of instant

application. At the time the invention was made it would have been obvious to modify Azizoglu

et al. to combine compression functions into functions of serializer/deserializer. One of ordinary

skill in the art would be motivated to do this to include indication of start, end of packet or idle

channel status in the ninth bit. See column 4, lines 48-53.

1.   Claims 6-8, 13, 22-24, 28, 37-39, 44, 53-55, 59, 63-64 are rejected under 35 U.S.C.

103(a) as being unpatentable over Azizoglu et al. in view of Bleickardt et al. US 5,461,622.

Azizoglu et al. disclose all of the method and apparatus limitations of the claims except

for logic to determine a stuffing opportunity that indicates an amount of stuffing data to be

framed, rate adapter generating a stuffing opportunity indicator such that payload framer receives

stuffing opportunity and frames stuffing data into payload based on indicator.

Bleickardt et al. discloses data transmission over SONET with use of buffer and stuff

control circuit (Figure 2, element 211) which inserts stuffing bytes to increase rate signal to

match certain rate and inserts a Stuffing Indicator byte for use at the receiving end to control

proper destuffing. Stuffing bytes occupy positions in payload in positions known to transmitter

and receiver.

At the time the invention was made it would have obvious to modify Azizoglu et al. with

stuff control circuit of Bleickardt et al. One of ordinary skill in the art would be motivated to do

so for proper rate adjustment. See column 4, lines 37-44.

Conclusion

2.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Kerns et al. US 6,819,679 disclose multiprotocol packet framing technique.

Goodman et al. US 6,636,559 disclose semi transparent tributary for synchronous transmission.

Hayward et al. US 6,222,848 disclose gigabit Ethernet interface to SONET ring.

Jha US 6,847,644 discloses hybrid data transport scheme over optical networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ

**FRANK DUONG
PRIMARY EXAMINER**